

IN THE CLAIMS:

Claim 1 (currently amended): An information recording method wherein information is recorded to a recording medium by utilizing an interference pattern formed by the interference between an information light, which is spatially modulated by digital pattern information displayed in a spatial light modulator which has a large number of pixels, and reference light for recording, ~~and a reference light for recording~~, wherein:

digital information that is recorded is digital pattern information and expressed by the matching or mismatching of the attributes of adjacent pixels in said spatial light modulator.

Claim 2 (original): An information recording method according to claim 1, wherein said digital information is expressed by a plurality of pixels aligned in one-dimension of said spatial light modulator.

Claim 3 (original): An information recording method according to claim 2, wherein said spatial light modulator has a large number of pixels arranged in a grid, and plural digital pattern information expressed by a plurality of the pixels aligned in said one-dimension are combined to be displayed as two-dimensional digital pattern information.

Claim 4 (original): An information recording method according to any of claims 1 to 3, wherein said digital pattern information is such that a pixel whose attribute does not match that of one adjacent pixel is displayed so as to invariably have a pixel whose attribute matches on the other end.

Claim 5 (original): An information recording method according to any of claims 1 to 4, wherein said digital pattern information is such that a pixel whose attribute does not match that of one adjacent pixel is displayed so as to invariably have a certain number or more of consecutive pixels whose attributes match on the other sides.

Claim 6 (currently amended): An information reproducing method ~~that the~~ in which information is reproduced from a recording medium wherein information is recorded by utilizing an interference pattern formed by the interference between an information light, which is

spatially modulated by digital pattern information displayed in a spatial light modulator which has a large number of pixels, and reference light for recording, ~~and a reference light for recording~~, wherein:

a reference light for reproduction is radiated to the recording medium to generate a reproduction light by which said digital pattern is carried;

and the matching and mismatching of the attributes of adjacent pixels in the digital pattern information of the reproduction light are detected.

Claim 7 (currently amended): ~~[[AN]]~~ An information reproducing method according to claim 6, where a detector for detecting reproduction light has a plurality of pixels, and the pixels of the detector are disposed on a border of adjacent pixels in said digital pattern information.

Claim 8 (original): An information reproducing method according to claim 6 or 7, wherein digital pattern information of said reproduction light is expressed by a plurality of pixels aligned in one dimension of said spatial light modulator.

Claim 9 (currently amended): An information recording/reproducing method wherein information is recorded to a recording medium by utilizing an interference pattern formed by interference between an information light, which is spatially modulated by digital pattern information displayed in a spatial light modulator which has a large number of pixels, and a reference light for recording, and information is reproduced from a recording medium to which information is recorded, wherein:

digital information that is recorded is digital pattern information and expressed by the matching or the mismatching of the attributes between adjacent pixels in the spatial light modulator;

the reproduction light which carries digital pattern information is generated by irradiating the recording medium with a reference light for reproduction; and

the matching and mismatching of attributes of adjacent pixels in the digital pattern information of the reproduction light are detected.

Claim 10 (original): An information recording/reproducing method according to claim 9, wherein said digital pattern information is expressed by a plurality of pixels disposed in one dimension of said spatial light modulator.

Claim 11 (original): An information recording/reproducing method according to claim 10, wherein said spatial light modulator has a large number of pixels arranged as a grid and combines a plurality of digital pattern information expressed by a plurality of the pixels arranged in one dimension to display as two-dimensional pattern information.

Claim 12 (original): An information recording/reproducing method according to any of claims 9 to 11, wherein said digital information is such that a pixel whose attribute does not match that of one adjacent pixel is displayed so as to invariably have a pixel whose attribute matches on the other end.

Claim 13 (currently amended): An information recording/reproducing method according to any of claims 9 to ~~[[12]]~~ 11, wherein said digital information is such that a pixel whose attribute does not match that of one adjacent pixel is displayed so as to invariably have a certain number or more of consecutive pixels whose attributes match on the other sides.

Claim 14 (currently amended): An information recording/reproducing method according to any of claims 9 to ~~[[13]]~~ 11, wherein the detector for detecting said reproduction light has a plurality of pixels and the pixels of said detector are disposed on the borders of adjacent pixels in said digital pattern information.

Claim 15 (currently amended): An information recording method wherein information is recorded in a recording medium by utilizing an interference pattern formed by interference between an information light, which is spatially modulated by digital pattern information displayed in a spatial light modulator which has a large number of pixels arranged in a grid, and a reference light for recording, wherein:

digital information that is recorded is digital pattern information and expressed by the allocation of pixel groups comprising a succession of a plurality of pixels whose attributes are match to each other within a predetermined area of the spatial light modulator.

Claim 16 (original): An information recording method according to claim 15, wherein a plurality of said pixel groups are disposed in a predetermined area.